REMARKS

Claims 47-63 are currently pending in this application. Applicants have cancelled claims 1-46 and replaced them with a streamlined set of claims 51-63. The new claims correspond to old claim numbers as follows.

Old	New
1	51
3	52
7	53
12	54
13	55
14	56
15	57
16	58
23	61

In the Office Action, the Examiner rejected claims 1-50 under 35 U.S.C. Section 103(a) as being obvious over Randle (US Patent No. 6,263,047) in view of Kochan (US Patent No. 6,104,197). In a genuine effort to advance the prosecution of this application, Applicants have cancelled all original claims 1-46 and replaced them with claims 51-63. Applicants traverse the rejection of claims 47-50. Also, to the extent that the rejections apply to the newly added claims, Applicants respectfully traverse the rejection.

An important feature taught by the present invention is qualifying a physical wire line for xDSL use from only a **single end** without having to rely on another testing equipment at

another end. According to the present invention, this is accomplished by using a TDR to transmit a signal and receive a return waveform. Based on the received return waveform, a transfer function of the wire line is obtained. A transfer function is essentially a signal attenuation level at various frequencies that are used in the xDSL band.

The specification of the present invention teaches at least two different embodiments to derive the transfer function. In one embodiment, a physical layout (plant map) of the wire line is derived from the return waveform. The plant map includes such data as the wire gauge and distance for each segment of the wire line. For example, the wire line can be composed of 1500 feet of 20 gauge wire from a central office, followed by a 350 feet of 26 gauge wire going into a subscriber's house. This plant map is then fed into a customized circuit modeling analysis to derive the transfer function. In another embodiment, the return waveform is compared to a library of known transfer functions that represent known wire plant models to find the best matched transfer function.

From the derived transfer function, a signal to noise ratio is calculated over the frequency bands of the xDSL in order to qualify the line.

As can be appreciated by persons skilled in the art, the single ended testing feature of the present invention using a TDR at only a single end of the wire line provides many advantages

including substantial cost savings and efficient testing. Applicants submit that no prior art teaches the derivation of a transfer function from a return waveform that is obtained by a TDR at a single end, let alone use of such transfer function for qualifying the line for xDSL use.

This inventive feature is recited in claim 47 as "obtaining a return waveform by using a TDR **at a single end** of a wire communication line", "determining a transfer function based on the return waveform" and "analyzing the transfer function so as to **qualify the wire communication line for xDSL use**". Other independent claims 51 and 61 now explicitly recite that the transfer function is analyzed so as to qualify the wire communication line for **xDSL use**.

In the Office Action, the Examiner stated that Randle teaches a "system and method for determining the suitability of a communication line for xDSL use". Applicants respectfully disagree. Randle neither teaches nor suggests analyzing the line for **xDSL use** as claimed in claim 47 and in all independent claims. Qualification of a wire line for a high speed DSL data service is quite different from testing the line for adequacy of handling an analog voice line.

Kochan is also not concerned with a digital subscriber line (DSL) and clearly not with analyzing a TDR signal to "qualify" the line for **xDSL use** as claimed in all independent claims.

Thus, the combination of Randle and Kochan also does not teach or suggest analyzing a transfer function of a wire communication line for xDSL qualification.

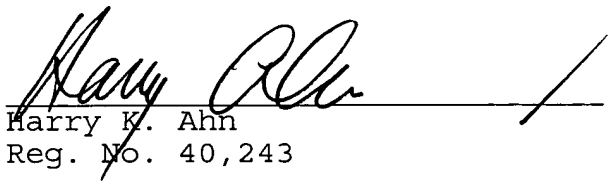
In the Office Action, the Examiner refers to Applicants' specification at page 11, lines 34-37 to state that circuit modeling systems that are used to generate transfer functions are well known in the art. What the specification states is that circuit modeling software such as SPICE are well known (page 11, line 36). However, Applicants are not claiming a circuit modeling software. Rather, Applicants are claiming the application of the modeling software to derive a transfer function "**over a plurality of xDSL frequency bands**" as recited in claim 47.

Independent claim 51 similarly recites "using a TDR at a **single end** of a wire communication line . . . analyzing the transfer function so as to qualify the wire communication line for **xDSL use**". Similarly, independent claim 61 recites "a TDR that transmits a signal at a **single end** of a wire communication line . . . to analyze the transfer function so as to qualify the wire communication line for **xDSL use**".

Claims 48-50, 52-60 and 62-63 are also considered to be patentable by virtue of their respective dependency from independent claims 47, 51 and 61.

Based upon the above amendments and remarks, applicants respectfully request reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with applicants' attorney would expedite prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,



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